



Closing the Brief Case: An Unusual Cause of Infective Endocarditis after a Urological Procedure

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ANSWERS TO SELF-ASSESSMENT QUESTIONS

1. What is the usual habitat of *Actinotignum schaalii*?

- A. The digestive tract
- B. The oropharynx
- C. The skin
- D. The genitourinary tract

Answer: D. *A. schaalii* is part of the urinary microbiota, predominantly colonizing elderly patients and young children. Interestingly, *A. schaalii* has not been reported as being a part of the intestinal microbiota.

2. *Actinotignum schaalii* grows easily under what conditions?

- A. On MacConkey agar under aerobic conditions
- B. On MacConkey agar under conditions of a 5% CO₂ atmosphere
- C. On Trypticase soy agar with 5% sheep blood under aerobic conditions
- D. On Trypticase soy agar with 5% sheep blood under conditions of a 5% CO₂ atmosphere

Answer: D. The growth of *A. schaalii* is slow (requiring >48 h) and necessitates the use of blood-enriched media incubated under 5% CO₂ conditions or in anaerobic atmosphere. MacConkey agar, selective for Gram-negative pathogens, is not adapted for use with this Gram-positive organism. Microbiologists should always consider the possibility of the presence of *A. schaalii* infection in young or elderly patients with leukocyturia when standard chromogenic media remain sterile after 24 h of incubation. In such cases, if urine has been stored in tubes with preservative for no more than 48 h, blood agar plates should be inoculated and incubated at 37°C under 5% CO₂ conditions and/or anaerobically for 48 h.

3. *Actinotignum schaalii* is usually susceptible to what antibiotic?

- A. Amoxicillin
- B. Co-trimoxazole
- C. Ciprofloxacin
- D. Amdinocillin

Answer: A. *A. schaalii* is susceptible to all β -lactams except amdinocillin, to which it

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has been reported to be either susceptible or resistant. It is frequently resistant to co-trimoxazole and to quinolones (norfloxacin and ciprofloxacin). Resistance to these antibiotics, widely used in the treatment of UTIs, is problematic and often results in recurrences.

TAKE HOME POINTS

- *Actinotignum schaalii* (formerly *Actinobaculum schaalii*) is an emerging uropathogen.
- *A. schaalii* can be responsible for invasive infections (bacteremia, endocarditis, spondylodiscitis) and for abscesses.
- *A. schaalii* infection should be suspected especially in elderly patients and in young children with urinary tract abnormalities or after urological interventions.
- The use of blood agar media incubated 48 h under 5% CO₂ conditions or in anaerobiosis is warranted to detect the presence of *A. schaalii* in clinical specimens.
- *A. schaalii* is frequently resistant to co-trimoxazole and fluoroquinolones.
- In cases of *A. schaalii*-related infections, antibiotic therapy needs to be continued for up to 2 weeks or more depending on the infection site.